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(54) Title: **TOLERANCE TO GRAFT PRIOR TO THYMIC REGENERATION**

(57) Abstract: The present disclosure provides methods for inducing tolerance in a recipient to a mismatched graft of an organ, tissue, and/or cells, by disrupting sex steroid signaling in the patient, wherein the bone marrow and other immune cell functionality is improved without, prior to, or concurrently with, thymic regeneration. In some embodiments, sex steroid signaling in the patient, is interrupted or ablated by the administration of LHRH agonists, LHRH antagonists, anti-LHRH receptor antibodies, anti-LHRH vaccines, anti-androgens, anti-estrogens, selective estrogen receptor modulators (SERMs), selective androgen receptor modulators (SARMs), selective progesterone response modulators (SPRMs), ERDs, aromatase inhibitors, or various combinations thereof.

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